

Remarks/Arguments

Reconsideration of the above-identified application in view of the present amendment is respectfully requested. Claims 1-4, 8-11, and 18-28 are pending in the present application. Applicant respectfully acknowledges that claims 23-28 are allowable, and that claims 18-19 are allowed. Claim 23 has been amended.

Rejection of Claims 1-4, 8-11, 20, 22, and 23 under 35 U.S.C. §102

The Office Action of January 6, 2007 rejected claims 1-4, 8-11, 20, 22, and 23 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 1,607,662 to Boynton. In response to this rejection, independent claim 23 in the application has been amended to distinctly claim the invention and to more clearly define the invention over the cited reference. It is respectfully submitted that the discussion below of the teachings of the cited reference, in conjunction with the amendment of claim 23, places all pending claims in condition for allowance.

Claim 1 recites an apparatus for cutting bone. The apparatus comprises an elongate member having a central axis. The elongate member includes a tubular portion that extends between a proximal end portion and a distal end portion. The distal end portion includes an articulatable head section with at least one planar stop surface and a cutting edge projecting from the at least one planar stop surface. The head section is articulatable about a pivot axis that extends transverse to the central axis. The apparatus further comprises means for articulating the head section relative to the tubular portion.

It is respectfully submitted that claim 1 is patentable over the cited art because Boynton does not contain any teaching as to the existence of a stop surface.

Boynton teaches that the disclosed device is a rotary reamer (Col. 1, lines 6-7), which is a rotational tool used to enlarge holes. In order to achieve this goal, the blade (22) must be able to pivot about the pivot bolt (24). The blade (22) will be unable to pivot unless the hole to be widened possesses a diameter larger than that of tubular section (3). Therefore the alleged Planar Stop indicated in Figure 1 on page 4 of the Office Action of January 6, 2007 is at no time engaged with the wall of the material to be cut in such a manner as to prevent accidental removal of desired surrounding material by the blade (22) as is the case in the present invention. Consequently the alleged Planar Stop cannot truly serve to operate as a planar stop surface as recited in claim 1.

Additionally, it is respectfully submitted that claim 1 is patentable over the cited art because Boynton does not disclose a device comprising a distal end possessing a cutting edge projecting from a planar stop surface.

Boynton teaches that the rotary reamer blade (22) is pivotally mounted to the casing (2). The casing is comprised of tubular sections (3). The alleged Planar Stop references to a lower tubular section (3) as taught by Boynton. The rotary reamer blade (22) is part of the distal end, while the alleged Planar Stop is part of the tubular portion. Because the rotary reamer blade (22) is located on the distal end while the alleged Planar Stop is located on the tubular section (3) as taught by Boynton, it is not possible for the rotary reamer blade (22) to project from the alleged Planar Stop. Hence, the features recited in claim 1 are not taught by Boynton.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 1 is not anticipated by Boynton, and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 1 be allowed.

Claim 2 recites a shaft member connected to the head section and extending coaxially within the tubular portion. The shaft member and the head section are axially movable relative to the tubular portion.

It is respectfully submitted that claim 2 is patentable over the cited art because Boynton does not disclose a device comprising a shaft member and head member axially moveable relative to the tubular portion.

Boynton teaches that the rotary reamer blade (22) is pivotally mounted to the casing (2). The Office Action states that the casing (2) is considered to be the tubular portion, and further states that the rotary reamer blade (22) is considered to be the head member. The casing is comprised of tubular sections (3). The tubular sections (3) that comprise the casing (2) are threadedly connected (4) to one another. The rotary reamer blade (22) is not capable of axial movement relative to the tubular portion, as the tubular portion (2) cannot increase or decrease in length because the tubular sections (3) are threadedly connected (4) to one another to form a fixed length casing (2). Hence, the features recited in claim 2 are not taught by Boynton.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 2 is not anticipated by Boynton and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 2 be allowed.

Claims 3 and 4 are indirectly dependent from claim 1 and are allowable for at least the reasons that claim 1 is allowable, and for the specific limitations recited therein. It is therefore respectfully requested that claims 3 and 4 be allowed.

Claim 8 recites an apparatus for cutting through cortical bone in a vertebral body. The apparatus comprises an elongate member having a central axis, the

elongate member including a tubular portion that extends between a proximal end portion and a distal end portion. The distal end portion includes an articulatable head section with a cutting edge for cutting cortical bone and at least one planar stop surface for engaging cortical bone after the cortical bone is cut by the cutting edge to stop further movement of the head section and prevent the cutting edge from undesirably engaging other tissue or bone. The head section of the distal end portion is pivotable between a plurality of predetermined angular positions about a pivot axis that extends transverse to the central axis. The apparatus comprises a mechanism for pivoting the head section relative to the tubular portion.

It is respectfully submitted that claim 8 is patentable over the cited art because Boynton does not contain any teaching as to the existence of a stop surface.

Boynton teaches that the disclosed device is a rotary reamer (Col. 1, lines 6-7), which is a rotational tool used to enlarge holes. In order to achieve this goal, the blade (22) must be able to pivot about the pivot bolt (24). The blade (22) will be unable to pivot unless the hole to be widened possesses a diameter larger than that of tubular section (3). Therefore the alleged Planar Stop is at no time engaged with the wall of the material to be cut in such a manner as to prevent accidental removal of desired surrounding material by the blade (22) as is the case in the present invention. Consequently, the alleged Planar Stop cannot truly serve to operate as a planar stop surface as recited in claim 8.

Additionally, it is respectfully submitted that claim 8 is patentable over the cited art because Boynton does not disclose a device comprising a distal end possessing a cutting edge projecting from a planar stop surface.

Boynton appears to teach that the rotary reamer blade (22) is pivotally mounted to the casing (2). The casing is comprised of tubular sections (3). The alleged Planar Stop 7 references to a lower tubular section (3) as taught by Boynton. The rotary reamer blade (22) is part of the distal end, while the alleged Planar Stop is part of the tubular portion. Because the rotary reamer blade (22) is located on the distal end while the alleged Planar Stop is located on the tubular section (3) as taught by Boynton, it is not possible for the rotary reamer blade (22) to project from the alleged Planar Stop. Hence, the features recited in claim 8 are not taught by Boynton.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 8 is not anticipated by Boynton, and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 8 be allowed.

Claim 9 recites a shaft member connected to the head section and extending coaxially within the tubular portion. The shaft member and the head section are axially moveable relative to the tubular portion.

It is respectfully submitted that claim 9 is patentable over the cited art because Boynton does not disclose a device comprising a shaft member and head member axially moveable relative to the tubular portion.

Boynton teaches that the rotary reamer blade (22) is pivotally mounted to the casing (2). The Office Action states that the casing (2) is considered to be the tubular portion, and further states that the rotary reamer blade (22) is the head member. The casing is comprised of tubular sections (3). The tubular sections (3) that comprise the casing (2) are threadedly connected (4) to one another. The rotary reamer blade (22) is not capable of axial movement relative to the tubular

portion, as the tubular portion (2) cannot increase or decrease in length because the tubular sections (3) are threadedly connected (4) to one another to form a fixed length casing (2). Hence, the features recited in claim 9 are not taught by Boynton.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 9 is not anticipated by Boynton, and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 8 be allowed.

Claims 10 and 11 are indirectly dependant from claim 8 and are allowable for at least the reasons that claim 8 is allowable, and for the specific limitations recited therein. It is therefore respectfully requested that claims 10 and 11 be allowed.

Claim 20 recites an apparatus for cutting bone. The apparatus comprises and elongate member having a central axis. The elongate member includes a tubular portion that extends between a proximal end and a distal end portion. The distal end portion includes an articulatable head section with at least one stop surface and a cutting edge projecting from the at least one stop surface. The head section is articulatable about a pivot axis that extends transverse to the central axis, wherein the distal end portion of the elongate member further includes a ratchet wheel fixed to the head section for pivotal movement about the pivot axis. The ratchet wheel has a first set of a ratchet teeth. The first set of ratchet teeth are able to engage with a complimentary second set of ratchet teeth on a distal end of the tubular member. The apparatus further comprises means for articulating the head section relative to the tubular portion.

It is respectfully submitted that claim 20 is patentable over the cited art because Boynton does not contain any teaching as to the existence of a stop surface.

Boynton teaches that the disclosed device is a rotary reamer (Col. 1, lines 6-7), which is a rotational tool used to enlarge holes. In order to achieve this goal, the blade (22) must be able to pivot about the pivot bolt (24). The blade (22) will be unable to pivot unless the hole to be widened possesses a diameter larger than that of tubular section (3). Therefore the alleged Planar Stop is at no time engaged with the wall of the material to be cut in such a manner as to prevent accidental removal of desired surrounding material by the blade (22) as is the case in the present invention. Consequently, the alleged Planar Stop cannot truly serve to operate as a planar stop surface as recited in claim 20.

Additionally, it is respectfully submitted that claim 20 is patentable over the cited art because Boynton does not disclose a device comprising a distal end possessing a cutting edge projecting from a planar stop surface.

Boynton teaches that the rotary reamer blade (22) is pivotally mounted to the casing (2). The casing is comprised of tubular sections (3). The alleged Planar Stop 7 references to a lower tubular section (3) as taught by Boynton. The rotary reamer blade (22) is part of the distal end, while the alleged Planar Stop is part of the tubular portion. Because the rotary reamer blade (22) is located on the distal end while the alleged Planar Stop is located on the tubular section (3) as taught by Boynton, it is not possible for the rotary reamer blade (22) to project from the alleged Planar Stop. Hence, the features recited in claim 20 are not taught by Boynton.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 20 is not anticipated by Boynton, and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 20 be allowed.

Claim 22 recites an apparatus for cutting bone. The apparatus comprises an elongate member having a central axis. The elongate member includes a tubular portion that extends between a proximal end portion and a distal end portion. The distal end portion includes an articulatable head section with at least one stop surface and a cutting edge projecting from the at least one stop surface, wherein the cutting edge projects at a right angle from the at least one stop surface which is adapted to engage bone after the bone is cut by the cutting edge to stop further movement of the head section and prevent the cutting edge from undesirably engaging other tissue or bone. The head section is articulatable about a pivot axis that extends transverse to the central axis. The apparatus further comprises means for articulating the head section relative to the tubular portion.

It is respectfully submitted that claim 22 is patentable over the cited art because Boynton does not contain any teaching as to the existence of a stop surface.

Boynton teaches that the disclosed device is a rotary reamer (Col. 1, lines 6-7), which is a rotational tool used to enlarge holes. In order to achieve this goal, the blade (22) must be able to pivot about the pivot bolt (24). The blade (22) will be unable to pivot unless the hole to be widened possesses a diameter larger than that of tubular section (3). Therefore the alleged Planar Stop is at no time engaged with the wall of the material to be cut in such a manner as to prevent accidental removal of desired surrounding material by the blade (22) as is the case in the present invention. Consequently, the alleged Planar Stop cannot truly serve to operate as a planar stop surface as recited in claim 22.

Additionally, it is respectfully submitted that claim 22 is patentable over the cited art because Boynton does not disclose a device comprising a distal end possessing a cutting edge projecting from a planar stop surface at a right angle.

Boynton teaches that the rotary reamer blade (22) is pivotally mounted to the casing (2). The casing is comprised of tubular sections (3). The alleged Planar Stop 7 references to a lower tubular section (3) as taught by Boynton. The rotary reamer blade (22) is part of the distal end, while the alleged Planar Stop is part of the tubular portion. Because the rotary reamer blade (22) is located on the distal end while the alleged Planar Stop is located on the tubular section (3) as taught by Boynton, it is not possible for the rotary reamer blade (22) to project from the alleged Planar Stop at a right angle. Hence, the features recited in claim 22 are not taught by Boynton.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 22 is not anticipated by Boynton, and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 22 be allowed.

As amended, claim 23 recites an apparatus for cutting through cortical bone in a vertebral body. The apparatus comprises an elongate member having a central axis. The elongate member includes a tubular portion that extends between a proximal end portion and a distal end portion. The distal end portion includes an articulatable head section with a cutting edge for cutting cortical bone and at least one planar stop surface for engaging the cortical bone after the cortical bone is cut by the cutting edge to stop further movement of the head section and prevent the cutting edge from undesirably engaging other tissue or bone. The cutting edge projects from the at least one planar stop surface. The head section of the distal

end portion is pivotable between a plurality of predetermined angular positions about a pivot axis that extends transverse to the central axis, wherein the distal end portion of the elongate member includes a ratchet wheel fixed to the head section for pivotal movement about the pivot axis. The ratchet wheel has a first set of ratchet teeth, the first set of ratchet teeth being engageable with a complimentary second set of ratchet teeth on a distal end of the tubular member. There is a mechanism for pivoting the head section relative to the tubular portion.

It is respectfully submitted that claim 23 as amended is patentable over the cited art because Boynton does not contain any teaching as to the existence of a stop surface.

Boynton teaches that the disclosed device is a rotary reamer (Col. 1, lines 6-7), which is a rotational tool used to enlarge holes. In order to achieve this goal, the blade (22) must be able to pivot about the pivot bolt (24). The blade (22) will be unable to pivot unless the hole to be widened possesses a diameter larger than that of tubular section (3). Therefore the alleged Planar Stop is at no time engaged with the wall of the material to be cut in such a manner as to prevent accidental removal of desired surrounding material by the blade (22) as is the case in the present invention. Consequently, the alleged Planar Stop cannot truly serve to operate as a planar stop surface as recited in claim 23.

Additionally, it is respectfully submitted that claim 23 as amended is patentable over the cited art because Boynton does not disclose a device comprising a distal end possessing a cutting edge projecting from a planar stop surface.

Boynton teaches that the rotary reamer blade (22) is pivotally mounted to the casing (2). The casing is comprised of tubular sections (3). The alleged Planar Stop 7 references to a lower tubular section (3) as taught by Boynton. The rotary reamer blade (22) is part of the distal end, while the alleged Planar Stop is part of the tubular portion. Because the rotary reamer blade (22) is located on the distal end while the alleged Planar Stop is located on the tubular section (3) as taught by Boynton, it is not possible for the rotary reamer blade (22) to project from the alleged Planar Stop. Hence, the features recited in claim 23 as amended are not taught by Boynton.

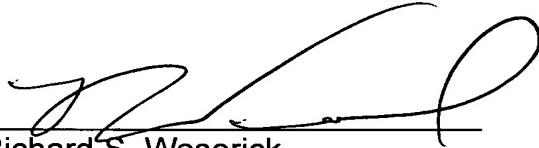
In view of the foregoing, it is respectfully submitted that the present invention as recited in claim 23 as amended is not anticipated by Boynton, and thus is patentable over the cited prior art. It is therefore respectfully requested that claim 23 as amended be allowed.

Claims 24-28 are indirectly dependant from claim 23 as amended and are allowable for at least the reasons that claim 23 as amended is allowable, and for the specific limitations recited therein. Accordingly, it is respectfully submitted that claims 24-28 would not be anticipated by Boynton and thus is patentable over the prior art.

It is respectfully submitted that the discussion above of the teachings of the cited reference, in conjunction with the amendment of the claim, places all pending claims in condition for allowance. Thus, allowance of the above-identified application is respectfully submitted.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,



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